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ABSTRACT

Papers on statistics which were presented at the 1986 International Federation of Library Associations (IFLA) conference include: (1) "Library Data Collection in Brazil (Nice Menezes de Figueiredo, Brazil); (2) "Fact-Finding on Statistics and Reference Tools in Japan" (Yuriko Sugimoto, Chihomi Oka, Ikuko Mayumi, and Keiko Kurata, Japan); (3) "Public Library Statistics in Libya" (Abubaker M. El-Hush, Libya); (4) "Preparing Librarians for the 21st Century--Study Abroad" (Maxine K. Rochester, Australia); and (5) "Library Statistics and Institutional Decision-Making" (Glyn T. Evans, United States). (KM)

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Division: Management and Technology

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Library Data Collection in Brazil

by

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1. INTRODUCTION

It is well known the role played by IFLA in the efforts for the establishment of international standardization for library statistics. IFLA's role indeed started more than fifty years ago, with the creation of the Sub-Committee on Library Statistics which, together with the ISO Committee 46 ellaborated the paper that provided Unesco with the basic document to be approved by its member States. In Frank Schick's words, the Unesco meeting of November 1970, which approved the "Recommendation concerning the international standardization of library statistics" ended a century of efforts" in that direction (1).

Looking back fifteen years since that "Recommendation" came to light, we can say that, in Brazil's case, only now it seems that a long and arduous battle is starting to give promising signs and some solid results.

In 1982, Carvalho (M. Beatriz) presented a paper to this same IFLA Section on Statistics discussing "Aspects of Library Statistics in Brazil"; for this, she made a search in the national bibliography on librarianship, identifying the "documents specifically devoted to library statistics" in Brazil, making brief comments on them (2).

She also emphasized the role of the Unesco Recommendation as a "decisive influence in the development of library statistics as subject for reflection". She described how library statistics collection, dissemination and use was made in Brazil, mentioning the lack of Brazilian standards for library statistics.

As an example of national statistics employed as the

basis for carrying research in library science, she cited the article by McCarthy published in a specialized Brazilian periodical, in 1980, where data, extracted from the Brazilian Statistical Yearbook "were arranged in such a way that differences in the situation of libraries in various regions of Brazil became clear" (3).

In order to update Carvalho's paper of 1982 on the subject and to offer another approach for the problem, I am going to present an analytical review of the Brazilian literature on collection of library statistics, from 1971 to 1985, trying to prove the assertion made above that promising signs are being noticed in Brazil on this subject.

2. ANALYTICAL REVIEW OF THE LITERATURE

The first two documents in the Brazilian literature, specifically dealing with the topic of library statistics, were presented by the same author, Silva, in the Congress in Librarianship and Documentation, in 1971 (4-5). These papers, according to their bibliography, were entirely based on literature in the area of statistics; it mentioned the classical texts of Cochrane, Fisher & Yates, Mood, some well known titles of Brazilian authors, and others.

In these papers the author proposed an ellaborate methodology based on data collection on borrowing and in-house use, in ten libraries of the Federal University of Pernambuco, for the years of 1953-1969. He arrived to annual indexes dividing the totals of borrowing and in-house use per year by the annual average of registered readers in these libraries. A

comparative study was made with the indexes of these ten libraries, making it possible to single out the years with the indexes above or below the average for each library. It was thus established the standards for optimum, good, acceptable and no-expressive performance for each library.

The other paper made use of the same indexes for annual borrowing and in-house use, and of coefficients created and calculated by the author, for the evaluation of books and periodical articles, the first by the ratio of annual borrowings and the second by the ratio of indexing in international indexes.

Silva made recommendations for library schools to include in the curriculum the discipline of Applied Statistics, as well as to the Library Associations to promote lectures and conferences on the application of statistics in library science and documentation.

Another early contribution for the Brazilian literature in this area is a paper by Stumpf and Saraiva, which was presented to a local meeting of librarians in the State of Rio Grande do Sul, in 1972 (6). The paper first called the attention for the importance of collecting daily, monthly and annual statistics in libraries; it suggested itens to be included in the forms and offered models for collecting data on borrowing and in-house use of books, pamphlets, periodicals and special materials.

The authors presented also a historical description of the international standardization of library statistics, based on Schick's article. After discussing the types of statistics

possible to be used in libraries, as series, frequency distribution, averages, and the use of graphics, they provided examples of measurable data existent in libraries. They added a full description of the different types of statistics that can be used to register data of borrowing, acquisition and technical services. In the bibliography they cited two of the earliest and most elementary books in librarianship (Ferraz, 1942, 2ed; Prado, 1963, 4th ed.) Salverson - The relevance of statistics to library evolution, CRL, 1969, and a Brazilian text on applied statistics.

Another paper, presented to the Brazilian Congress of Librarianship and Documentation, in 1979, made a survey of the specialized literature on statistics published in Brazil, identifying the three previous articles mentioned before. For the lack of adequate information for their study, the authors Reis and Telles (7) extrapolated to the areas of science and technology, trying to verify the situation of statistics in those areas, that is, which measures existed to collect and standardize statistical data necessary for the development of activities in science and technology.

They concluded that only in the area of biomedicine, statistics were regularly used and standardized, due to the World Health Organization that from every five years updated the international code for diseases. They found that this is the only area in science and technology that presented standardization of statistics accepted by a large number of countries.

The authors made a bibliographical search in librarian-

ship and referred to the Unesco Recommendation that followed the studies of ISO/IFLA. They also considered the teaching of statistics to librarians, showing that some undergraduate courses had already introduced the discipline of statistics as optional in the curriculum; they concluded that the lack of statistical knowledge could be the reason for librarians to be unable to grasp the potentiality of the contents in the data collected or in the data possible to be collected in a permanent, rational way.

Finally, the authors described a random survey they made among librarians working in the areas of science and technology, to try to learn which were the itens that were considered for statistical collection, mainly in the circulation sections of these libraries. The picture that the authors presented as a result of this survey showed that statistics could not be considered as an instrument for evaluation of the libraries in the areas of science and technology, because "lacking of an analytical vision of the statistics gathered".

They found that the collection was made automatically, with the repetition of some itens (volumes, number of readers, subjects) not taking into consideration others such as user's background, edition and title of the borrowed books and periodical titles. Also, they said, there was no definitions, and the headings of the forms were not clear enough, giving margin to different interpretations.

They offered some recommendations for the librarians, as head of library systems, to coordinate and standardize the collection of data in their systems. Pointed out, as a good

example to be followed, the work being done at the Central Library of the Federal University of Rio Grande do Sul, with a library system collecting data in standardized forms.

About teaching of statistics, they offered alternatives, this discipline being taught to the students of librarianship in their last course period when they had already acquired some professional knowledge, sufficient for the application of statistics, or the discipline being taught in extension courses.

The bibliography cited 16 itens, including Schick's article, the Unesco Recommendation, the Brazilian authors and some-non-specific titles referring to biomedicine statistics.

Chronologically, the next documents date of 1980 and were presented by the same group of authors: Ferreira, Souza and Oliveira; one appeared in the Bulletin of the Library Association of Brasilia (8) and the other was presented to a local meeting of librarians at the State of Rio Grande do Sul (9). They are similar papers, the first one a shorter version dealing briefly with the importance of making use of statistical data as a source for planning and administration of library services. Problems for collecting and utilization of data were appointed and examples were offered for the use of correlations, comparisons, establishment of percentages and proportions.

Some basic criteria for data collection was mentioned as: 1. To establish library objectives; 2. To define desired statistical output to measure the objectives; 3. To select the data to be controlled considering that they must: a) be

relevant, precise, permit comparisons; b) provide elements for decision making in the administrative, technical, library use sectors. As a conclusion, it was offered a suggestion for the librarians to re-evaluate the data being collected, in order for them to be better equipped to measure and thus to plan, control and evaluate their library services.

The second paper was an enlarged version of the first, discussing the same points, but then under the approach of data collection for operational level (micro-statistics used specifically by libraries) and national and international levels (macro - to provide information about the state and performance of libraries in a country or at international level). These national data being used for library planning and the establishment of standards.

New topics appeared on the conceptualization of statistics; a brief ellaboration on micro/macro collection of data was made referring to the previous Brazilian articles on the subject, trying more or less classify them under this approach; another new topic was introduced dealing with the international standardization and about Unesco and IFLA/ISO efforts, besides ALA with the publication of the Handbook on library statistics.

The bibliography of both papers are basically the same, that of the second paper enlarged to support the new topics added; cited were: ALA Handbook; Childers chapter in Advances in Librarianship, 1975; Griffen and Hall - Social indicators and library changes, LJ 1972; Salverson, Schick, the Brazilian authors and Cloke in Holroyd - Studies of library management, v. 2, 1974.

The following papers were presented at the Second National Seminar of University Libraries in 1981: the first reported the results of a survey of 265 libraries of institutions of higher education, which were questioned about their routine for gathering statistics of collection, services and users; it was presented by Carvalho (M.Carmen) and Ferreira (10). The survey showed that the great majority (262) of those libraries did collect data (daily) on these topics, with the main purpose of preparing annual reports; 135 libraries did so using standardized forms.

It was found that there was none or very little preocupation with the use of this information for analytical studies, comparing the collection against demand or as a basis for the services being offered by the libraries. Itens usually collected referred to:

Acquisition - subject and total of titles acquired;
Collection: books - total number of volumes, subjects;
periodicals - total number of titles by subscriptions, exchanges or received in donations;
Technical processing were collected in 144 libraries;
Users registered - mostly by totals of registered, and total of demands served;
Borrowing - total and subjects
ILL - only global totals; furnished and received
Reference - only the requests satisfied; only 20 libraries registered requests not attended.

The authors commented that the lack of established

objectives made the libraries to gather statistics with no intention of later utilization; therefore, many data collected presented no details, were mostly global numbers. For technical processing, the data were more detailed but it was not used for the establishment of standards.

They concluded that the collection was made automatically, more for tradition than for attending the specific needs of each library. Therefore, they made recommendations for the register of data to be more detailed for the description of the collection, including publishing date for books and pamphlets, and for periodicals to include subject areas and idioms; the use (borrowing and in-house) to be registered by subject and type of material.

Another recommendation was for the application of statistical data for associations, averages and ratios, providing examples of how to do this in library work. Finally, a table was provided at the end of the article, listing the types of data necessary for decision making in: Selection, Acquisition, Weeding, Physical space, Personnel distribution.

The bibliography cited, as the co-author was the main author of the previous two articles reviewed, included almost the same citations as follows: ALA Handbook; Childers; Griffen & Hall; the two previous Brazilian articles, plus: Beeler - Measuring the quality of library services; Krikelas - Library statistics and the measurement of library services, ALA Bulletin 1966; Anders - Statistical information as data for cooperative planning, Lib. Trends 75.

The second paper presented to this same Seminar of

University Libraries, 1981, was a report of the Working Group on Statistics and Standards, headed by Oliveira, a co-author of two previous papers (11). The Group took position establishing that collection of statistical data should be determined by the use this information can have on the activities of supervision/planning and evaluation of libraries.

It was pointed out the need for collecting data systematically in the areas: a) Administrative sector; b) Services rendered; c) Internal procedures. It was also raised the problem of lack of definitions which hamper the collection of comparable data. Recommendations were made by the Group regarding:

1. Minimum data to be collected systematically and regularly;
   a. Collection by type of material and area of knowledge;
   b. Growth of the collection, by area and type of material;
   c. Numbers of itens needed, by type of material;
   d. Collection use, borrowed and in-house, by subject;
   e. Inter-library loans, by numbers provided and received;
   f. Copies of articles, by number provided and received;

2. Special studies for services not favorable to data collection as reference population of users; costs, productivity, collection evaluation.

The next article appeared some years later, in 1984, in a specialized Brazilian periodical in the area, and by two of previous authors, Ferreira and Oliveira (12). It presented a methodology for the development of a manual MIS applied to special libraries. A brief explanation was given about what

constituted a MIS and that the objective of the paper was to propose a model for MIS, simplified and manual for (Brazilian) special libraries.

Another topic discussed the need for management information and a further explanation on the MIS is given, calling the attention for the need of standardized, reliable data, categories of data well defined to allow integration and comparison, and uniform terminology.

A full description of the methodology is made in five subtopics as follows:

1. Establishment of objectivies;
2. Establishment of data to be collected according to the characteristics of: period, source, precision, specificity, contents;
3. Ellaboration of the flow of activities to define the numerical data to be collected
4. Storage of data collection
5. Analysis of the data storaged in the system.

The bibliography cited texts in the area of library science, as: Brown - Information for planning, JAL 1981; Library data, statistic and information, Sp.Lib. 1980; Runyon - Towards the development of a library management information system, CRL 1981; in the area of management as: O'Brien - Management information systems: concepts, techniques and application, 1970. Other articles were cited from Brazilian periodicals in the area of administration, original or translated; books on applied statistics and management were also

cited.

Models and forms were appended, as well a vertical fluxogram for the processing of monographs.

In 1985 appeared a new paper prepared by a team headed still by one of the previous authors mentioned, Oliveira (13) which was presented at the 4th National Seminar of University Libraries. The paper described the methodology for performance evaluation of the Library System of the Federal University of Rio Grande do Sul.

An introduction described the development of the tools for the performance evaluation; another topic discussed the reformulation of these instruments in order to be achieved a clear definition of the data to be collected and to propiciate standardization in the procedures for data collection; the data were to be used as guidelines for the system.

A point was made that this document carried all necessary data for the ellaboration of a report on the system, but actually it was a fundamental source for the development of the techno-administrative activities and for the public relations of the system.

Models were attached of the Report of the Central Library System, of the Standards for performance evaluation of the system and of the forms for the register of the data collected, as well as of the criteria for analysis and conclusions about the data presented; a model plan for the development of activities for the following year also presented.

The bibliography cited only internal documents of the system, and the notes of courses on Management information for libraries, and of Library reports as tools for planning.

It cannot be forgotten that this Library System of the Federal University of the State of Rio Grande do Sul was cited years ago, in the paper by Reis and Telles, in 1979, as a model to be followed. It is very gratifying then to be able to register the fact and to ractify the advice given for the librarians of the country, that this is indeed a model system to be followed by those who really want to develop a good library service, according to the national situation and needs.

An unpublished paper finishes this survey; it is a project for standardization of the statistics of the information system of the Institute of Technological Research (IPT) of the State of São Paulo, prepared by a team headed by Rosetto (14). As a first step for the project it was made a survey among the libraries and documentation centers of the Institute in order to learn about the situation of the data collection in those libraries.

As a result of this survey it was developed, together with the Section of Organization and Methods of the Institute, a standardization of the forms to be used in data collection by the libraries of the system. Basically, these forms are to be used to collect data on: 1. Administrative and financial operations; 2. Technical processes; 3. Reference.

Models for all forms were attached as well as the questionnaire used for the survey. The bibliography cited the Brazilian authors (Ferreira, Reis & Telles, Silva) plus

Schick's, the Unesco Recommendation and the ISO International library statistics (ISO nº 2789).

3. CONCLUSIONS

It seems that for closing this paper and concluding the analytical review on the state of collecting library statistics in Brazil, it is needed to report on my own experience in this subject. From 1976 to 1980 while I was coordinating the master's Course in library Science at the University of Brasilia, it happened that the course had to count on foreign instructors, in its first two years, as part of our staff was abroad acquiring the necessary degrees.

In the first year were invited Steven Parker and Max Broome to teach a course on Library Planning, with the financial help of the British Council. One of the most difficult problems for this course was the collection of data, not only regarding libraries, but mainly for supporting the planning of the library system as proposed for the class work.

To my understanding, this problem was only a reflection of the general situation in the country, where at that time, almost ten years ago, the Ministry of Planning and the State Secretaries for Planning had been implanted quite recently.

Anyway, feeling the need for a better training of the librarians for the task of gathering data, while still in Brasilia I had an opportunity to coordinate an Organization of American States project for which activities I planned a course on Evaluation of Library Services. In a letter instructing the Professor invited to give the course, Gileon Holroyd (who had

already lectured the regular master's course on Planning and Evaluation of Information Services) I told her that the course "had to be given in a very low level, as it is directed to instructors and professional librarians with probably any background in the area, that is, only a B.A." which did not prepare them for evaluative tasks. Therefore, I asked Holroyd to "start from teaching how to collect meaningful statistics in order to use these for developing small evaluation and research projects".

Holroyd prepared a 60 hours course, given in compact way, using some Brazilian literature on library administration, and repeating it in three different regions of the country. More than sixty students attended those courses.

Another different experience occurred at the master's course in Brasilia, in the discipline of Research in Librarianship, lectured by Prof. Genevieve Casey, under a Fullbright sponsorship. The students who took this discipline declared in an interview for evaluating the course that "it had provided them with excellent methodological foundation and working methods; they felt they were well guided for writing their thesis", that is, collecting and organizing data.

This fact has been corrobated years later when, writing to a former student of this course - who happens to be one of the most productive author on this subject (Ferreira) - for the purpose of this paper, inquiring what led her and her co-author, also a graduate of that course (Oliveira) to write on this problem. Her answer: "Our interest in library statistics was born during the course on Research in librarianship when we

noticed the lack of measures for library services. From the discussions we then held, I prepared a survey of the literature on the subject for my thesis project on Statistical use in libraries. From this bibliography we started writing the first paper". The thesis, unhapilly was never written.

Another former student of Brasilia's master course, Carvalho (M.Carmen) who authored together with Ferreira, one of the articles already reviewed, wrote her master's thesis on the establishment of minimum standards for Brazilian university libraries, a sure consequence of her learning in the Research course mentioned.

The main author of the paper presented in 1972 (Stumpf) to whom I wrote inquiring about her interest in library statistics, explained me that: "I cannot remember very well the motives that took me to write about this, but I know that I always worried about data collecting and use, knowing that the libraries only did the collecting part; the use of the data was not made because they were not treated or explored, the librarians not learning how to do it in the library schools. I remember that I followed the discipline of "Statistics" in the Teacher's College and thought it very useful. Another reason was that working in the Library of the College of Geology I noticed that the data were put in to the reports without any treatment or, the only treatment was the estimate of the percentages. This way, I thought, they were not good for decision making nor could they be used for planning".

The author of the two first papers presented in 1971, Silva, was Head-librarian of the School of Dentistry of the

Federal University of Pernambuco, with degrees in Library Science and in Dentistry. Mentioning the non-existence of literature on statistics in the area of library science, the author claimed, in the introduction of one of his papers, "priority for the application of the indexes he created in library science", which he certainly deserved.

The comment about these papers is that indeed they introduced a methodology for gathering data in libraries, but it was too ellaborate, and the author, having not examined the foreign literature on the subject, developed a methodology which was really not quite adequate for library science application. This should explain why this methodology was never put to use again, although his papers have been continuously cited for fifteen years. Ferreira and Stumpf's suggestions on how to apply statistics to library science were much more easily followed.

It must be also said that it was certainly at the School of Dentistry that Silva learned about statistics, as this training was not provided by library schools. Most important, it must be remembered, that in Reis and Telles' paper of 1979, it was found that "only in biomedicine statistics were regularly used and standardized".

The same explanation perhaps can be given to Reis and Telles' interest on this subject, as Reis at the time of the writing of the article, worked at the library of the Center of Health Sciences of the Federal University of Rio de Janeiro, while Telles worked at the library of the Institute of Pure and Applied Mathematics of the National Research Council. Their

interest on the subject then could well be explained by the influence of their own respective work environments.

This assumption is based on one of the conclusions of their survey on the collection of statistical data in libraries in the areas of science and technology. Mentioning the work being done at the Central Library of the Federal University of Rio Grande do Sul, where the gathering of data was being done using standardized forms, they stated that: "this activity has its origin in the own librarians, as it is not a result of the needs of the universe in which they perform, that is not structured" (as the universes in biomedicine and mathematics).

The article cited by Carvalho (M.Beatriz) in 1982 about the use of national statistics as the basis for research in library science, was carried out by McCarthy, who is an English librarian, living for almost ten years in Brazil and with a Ph.D. in the United States. Therefore, a librarian with background and training quite different from the Brazilian ones; he was then able to make an original contribution to the Brazilian literature in the area.

As still reported by Carvalho in 1982, the Unesco Recommendation had a "decisive influence in the development of library statistics as a subject for reflection" in Brazil. Schick's article appeared first in the Unesco Bulletin which had a wide circulation in Brazil, mainly in its Spanish edition. Carvalho traced the first translation in Brazil in 1973 (15), and subsequently in 1976 and 1978 another translation appeared in a Brazilian periodical in library science, extracted from a Portuguese periodical; this later translation

was made by Professor Peixoto, a Portuguese scholar who had taught for sometime during the seventies at the Department of library science of the University of São Paulo. Another excellent foreign contribution for the Brazilian literature in library science (16-17).

A final observation that should be made on this respect of library data collection in Brazil, is that during the decade of the seventies, the country was awakened for the need of ellaborating and maintaining detailed statistical information on its socio-economic-educational-cultural situation, as Carvalho mentioned in her paper. At that time, as it was pointed out previously, were created the Ministry of Planning and the State Secretaries of Planning.

It could be said then, as reflection of this new perception in the country and even through the influence of the foreign literature, Brazilian library educators became concerned with strengthening the training of librarians in the area of management. Reis and Telles had already pointed out the fact in their paper, that many undergraduate schools had introduced the discipline "Statistics" in their curriculum, as optional.

Most important, at the same period it was created four master's courses in library science in the country, all of them with concentration areas in planning, administration of libraries and information centers. From the course in Brasilia came out the major authors in the subject of library statistics in Brazil, whose papers were discussed here in a lenghty way.

Finally, it could be observed, in this analytical review, how these papers have evolved, how the subject has been maturing

and advancing, from simple explanations and suggestions for the use of statistics in libraries, to a formal presentation of how to develop a MIS for special libraries. It was also shown that the suggestions for the betterment of the librarians' training in statistics, made by the first authors, have been implemented. Therefore, to conclude, we can say that there are promising signs and some solid results in Brazil, concerning collection of statistical data in libraries; it seems that we won't need another century for this activity to become a regular professional task.

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Fact-finding on Statistics and Reference Tools in Japan

by

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0138

Table of Contents

I. Introduction

1. Designated Statistics

2. Approved Statistics Report

3. Notified Statistics

II. Survey of the Present Condition of Statistics in Japan

A. Purposes of Research

1. Research-1

2. Research-2

3. Research-3

B. Results of Survey

1. Result of Research-1(1): Synopsis of Governmental Statistics

2. Result of Research-1(2): Case Study of Education, Culture and Science Statistics

3. Result of Research-2: Actual Conditions of Publication of a series of the Population Census

4. Result of Research-3: Comparison of Reference Tools

III. Summary and the Present Trends toward Mechanized Statistics

1. Trends of Mechanized Statistics

I. Introduction

Statistics are essential and fundamental data in descerning the actual conditions of social affairs. In this capacity they are extremely useful in the administration by govenmental agencies and local authorities, for management of private enterprises, and research in universities and various types of institutes. In Japan, after the Second World War, statistical laws were issued and have been enforced in 1947. Based on these laws, fundamental statistics about social affairs have been institutionally fixed by the government. At the same time, guide books on the use of statistics have been prepared, and user studies of statistics have been conducted. However, researches concerning statistics themselves and their reference tools are not enough, despite the fact that there has been some research on statistical use. In this paper, focus is laid on analysis of statistical materials, investigative reports and reference tools of statistics. We aim at clarifying the actual conditions of statistics in Japan, and grasping their future perspectives, by means of investigating several kinds of statistical materials.

In Japan, governmental statistics (official statistics) play a central role, according to the statistical laws mentioned above. These governmental statistics include the following three kinds:

(1) Designated Statistics

Designated Statistics are the most fundamental of all official statistics. For this category the laws designates investigations in which respondents are obliged to report, and in which

government, as an investigative organization, is required to publicize the results. Consequently, large-scale and detailed investigations can be conducted, and a high return rate can be expected.

(2) Approved Statistics

Approved Statistics are so named because they are approved by the director of the Administrative Management Agency in accordance with statistical report coordination laws. In contrast to the designated statistics, Most of the statistics of this category are concerned with specific subjects and are only investigated once by governmental agencies.

(3) Notified Statistics Reports

Notified Statistics are so named because the director of the Administrative Management Agency is notified in advance, when local authorities, metropolices or Bank of Japan conduct statistical investigations. Designated Statistics and Approved Statistics are not required to be reported. The contents and an outline of these governmental statistics are explained in the next chapter.

Besides these official statistics, non-governmental organizations prepare various statistics which are called private statistics. These statistics are different in scale and precision from those compiled by the government. They are valuable, however, for detailed investigations of some areas of industry which are not covered by governmental statistics, such as annual number of visitors to movie theaters, or Sumo wrestling and so on. Private statistics are not prescribed by law, and therefore the accuracy and trends of private statistics are apparently

difficult to determine. (In 1970, leading economic societies reported that there were 1300 kinds of statistics.) Furthermore, these statistics are originally made for the use and needs of private companies and industries and thus it is difficult to publicize and circulate them.

Statistical information is written up in various forms. Here, we classify these statistical materials as shown in Table 1.

Statistical investigative reports include raw data from statistical investigations. Statistical yearbooks and digests summarize or analyze the raw data. In contrast to this, statistical bibliographies and catalogs list the bibliographic information of those reports and various investigative methods, and indicate the location of those materials. In addition, statistical indexes enable users to search statistical tables with keywords in the titles of those tables. These four kinds of materials are shown as a chart in Figure 1. Incidentally, the materials here include not only printed publications but also microforms and magnetic tapes.

II. Survey of the Present Conditions of Statistics in Japan

A. Purposes of Survey

Japanese statistics can be classified as governmental statistics and private statistics, with governmental statistics occupying central position. Consequently, this paper focuses on and analyzes governmental statistics. This fact-finding study takes the following three steps:

1. Research-1 aims at grasping the outline of governmental statistics, before analyzing statistical materials. Numbers of the statistics are shown by types and by subjects. Taking education, culture and science as example subjects, the main statistics in these areas are briefly explained.

2. Research-2 aims at describing how investigative reports of the fundamental materials are published after investigations, in the light of time-lag, and changes in detailedness of reported contents.

For this purpose, the object of our research must be a large scale project which has produces statistical information published in several phases. Therefore, the Population Census has been chosen and analyzed with regard to the actual conditions of its publication in a series of related reports.

3. Research-3 Comparison of Reference Tools

Statistical materials can be divided into statistical investigative reports, which contain raw data, and reference tools for retrieval of those reports. Research-1 and 2 focus on statistical reports and, therefore, this research-3 aims at clarifying the present condition of those reference tools which raising several points which can be improved. Here the term "reference tools" has a broad meaning which includes statistical digests, bibliographic and locative information contained in those reports, indexes, and furthermore guidebooks for statistical use and reports of the government's statistical activities.

B. Results of Survey

1. Result of Research-1(1): Synopsis of Governmental statistics

In this research, we classified governmental statistics by subjects and types. The method used here is the following: First, according to the classification of Conspectus of Statistical Investigations (1984 Edition), statistics are arranged by subjects in the table of contents. We divided them into designated, approved and notified statistics and counted them. Next we used the Synopsis of Databases (1984 Edition) to look up the statistics which are input into databases. Only partial or summarized reports are input in these databases.

The results of this research are shown in Table 2. Statistical subjects are listed horizontally and statistical types are listed vertically. The number in parenthesis indicates database statistics. Numbers of statistical investigations are shown by subjects and types and totaled. For example, statistics about population are 2 in designated statistics, 13 in approved statistics, 3 in notified statistics and the total of 18 occupies 2.4% of a grand total of 741.

Looking at the subjects column, we see that the statistics in the category of agriculture, forestry, and fisheries are the most numerous, followed by medical care, welfare, and hygiene. These two subjects cover a broad range and statistics are considered very important in these areas. In contrast, statistics about standard of living and environment are few. Statistical investigations in these subject areas have such titles as "Consumers' Associations Basic Survey", and "Survey on Metropolitan Traffic Noise." As you see, this subject's range is narrow and not many topics are included here.

Looking at the types section, we see that approved statistics occupies 70% of the total. In contrast, designated statistics are few, and regarded as minimally essential. Naturally, of the 11 database statistics, 10 are designated statistics. These database statistics include "Medical Equipments" and the "Migrants Investigation File." The database statistics are not supplied by the government, but its auxiliary organizations. In this area, improvement are needed.

2. Result of research-1(2): Case Study of Education, Culture, and Science Statistics

Taking education, culture and science statistics as an example, we classified them by contents and the results are shown in Table 3.

The Table shows a variety of statistics in this subject area. These statistics cover not only fundamental data about school education, such as administration, finance, equipment, teachers, students, and educational expenditures, but also specific data investigated under special themes, such as the use of nursery school, and student counceling.

In this subject area there are only two designated statistics. They are not included in the table because their contents are quite comprehensive and cannot be classified under one category. The two designated statistics are "Basic School Survey" and "School Teacher' Survey."

The "Basic School Survey" is designated as statistical investigation no. 13. The survey has been taken annually since 1948 by the Ministry of Education for the purpose of shedding light on basic matters regarding schools such as the number of

schools, students enrolled graduates and teachers, school facilities, school expenditures, and so on. Before the survey was taken, the Ministry of Education, or governors of prefectures, had tabulated statistics based on the reports submitted by schools under their jurisdiction.

The "Basic School Survey" is comprised of six surveys, i.e. the school survey, the survey on school correspondence education, the survey on school-age children not attending school, the survey of graduates, the survey on school facilities and the survey on school expenditures. The date of the survey is May 1. The govenmental organizations carrying out the investigaitons differ depending on school founder and type of school, some being surveyed directly by the Ministry of Education, while others are handled through prefectures, cities, towns and villages.

"School Teachers' Survey" is also a designated statistic. "Basic School Teachers' Survey" and "School Teachers' Needs Survey" were combined in 1968, and the title was changed to the present name in 1971. The purpose of the survey is to clarify type of school teachers, their personal affairs and diligence, personnel changes, and to provide fundamental data for policy decision concerning school teachers.

The "School Teachers' Survey" is comprised of two surveys, i.e. the teacher's survey for elementary schools and for other kinds of schools, and the survey of teaching personnel changes through high schools and for colleges and universities. The survey is conducted every three years, and the results are published in the School Teachers' Statistical Survey Report.

3. Result of research-2: Actual Conditions of Publication of a series of Population Census

a. Purpose and object of research

Research-2 aims at clarifying the process by which the resulting data from investigations appears and is publicized in reports and other materials. The research is limited to one case study, and we chose the Population Census as an example for the following four reasons:

The Population Census is the most representational statistic of Japan. It is also one of the designated statistics which plays a central role in all statistics:

Population Census has a relationship with all Japanese people. In the first item of the 4th article in statistical laws, it is defined as " the investigation which the government conducts for all the nation concerning population," and the people are obliged to participate in the investigation:

Statistical laws ensures execution of this investigation. In the 2nd item of 4th article of the laws, it is prescribed that the investigation must be conducted every ten years, and in the 5th year of every investigation it is enforced by brief method:

It is an historical investigation. It began in 1919 and has continued every five years. The latest (14th) investigation was carried out last year(1985).

The object of this study is the reports of the 13th Population Census which was on a large scale in 1980. The outline of the 13th Population Census is as follows:

The object of the census was all the inhabitants in Japan.

The enumerated items of the investigation were, for a household member, education, occupation and school as well as basic items such as age, sex and marital status. For a household questioning such items as family grouping, type of building, sources of household income were listed.

The investigation began at the end of September and the questionnaires were returned at the beginning of October. In order to tabulate the results the following 4 methods were used:

Count on basis of summary sheets---to totalize the numbers of household and household members reported by enumeraters.

Final count---to tabulate all the questionnaires for a complete survey.

Twenty-percent sample tabulation---to extract 20% of all the households according to national average, and tabulate the questionnaires.

Using this outline of the Population Census, we conducted a case study.

b. Research method

(1) research objects---a series of reports concerning the Population Census

(2) research items:

a) After the investigation, various reports are published in a set order, based on several tabulation methods. We analyzed the order of a series of reports from the viewpoint of the publication date.

b) We selected enumerated items about households, and pursue how those items were published in several reports.

b. Research procedures:

a) search of publication date of reports

b) selection of reports which publicize household data and analyzation of the tables of contents for detailed items about household.

c. Results

The contents of the publications derived from the resulting data of the Population Census are shown in Table 4. As you see, the publications of the Population Census comprise a series of reports totaling 266 volumes. The result of our analysis of these publications are summarized as following:

(1) Publication of reports concerning the Population Census

Publication dates of reports are tabulated in Table 5. This table has the publication year shown horizontally, and volumes, contents, and tabulation methods shown vertically. Series have been published one by one, and real lines in the table indicate the first and the last date of publications, as well as the duration of the periods of their publication.

Prompt Tabulation Series 1, 2-1, and 2-3 were published during the next year of the investigation. As their titles show, their purpose was to promptly publicize reports of the results. In 1982 during the second year after the investigation, the final count reports were published. In the same year, vols. 1 and 2 of the main reports were published in order to publicize the basic results of all enumerated items. During the last half of 1982, the basic results of the place of work, schools and migrants categories were published. In the last half of 1983, three years after the investigation, vol. 3, concerned with household

numbers, and special volume, concerned with population gravitation were published. In the last half of 1983, vol. 5-2, numbers of employees by industry, vol. 5-4, commuting means, and vol. 6-2, migration population by occupation, were published. By that time, the publication of the basic results with final counts had been completed. In 1984, in addition to the basic results, reports based on the 20% sample tabulation were published to show more detailed items. Furthermore, cross tabulation of the subcategories of industry and occupations(vol.7-1) and migrants of three metropolices(vol.7-2) were published as a special series. Finally in 1985, final report entitled "Population of Japan" was published as summary of all the reports which had appeared from 1981 to 1984. This final report discusses and condenses the results of all the enumerated items reported in previous publications and includes a number of graphs.

As mentioned above, in addition to the reports themselves, four kinds of series have been sequentially published. They analyze and explain the results and are helpful to users who need a general outline.

(2) Publication of detailed items

Table 6 shows how household items such as household number and household membership have been publicized in a series of reports. In the Table detailed items of household numbers and membership are listed vertically, and their publication dates, titles and tabulation methods are listed horizontally.

Basic items, such as household numbers, ordinary household numbers, and household membership, were published in a summary

sheet first and then promptly reported with a 1% sample. Later they were reported once again with the final count. In 1983, household numbers by type (mother-children household, aged-single household, etc.) and by occupation and industry were reported. By this year the reports with final counts had been completed. The next reports in 1984 were based on a 20% sample, or limited areas, and included more detailed items than before. The final report published in 1985 includes basic items as well as more detailed items based on the 20% sample.

d. Considerations

Characteristics of publications of the Population Census of 1980 are considerd as follows:

(1) Publication of reports were relatively prompt. Only three months after questionnaires were returned in October 1980, the total population, based on the summary sheet, was reported. Also, the informatin concerning basic items with final counts were fully reported at the end of 1982.

(2) Results concerning various kinds of themes were reported. Enumerated items in the Population Census questionnaire were not only sex and age, but also occupation and academic career and size of residence. These various items were reported not only as basic tabulation results, but also with analysis, such as cross tabulation between items.

In summary, in the Population Census we investigated basic results were published two years later than the investigation, and final reports were completed five years later. Between the prompt reports and the final reports, various specific themes and several kinds of series were also published.

4. Result of Research-3 Comparison of Reference Tools

a. Method

First of all, we checked journal articles and reference books to locate fundamental statistical reference tools. The references we consulted were Reference Books in Japan and its quaterly supplements, and Guidebook to Statistical Use, and in Conspectus of Library Information Sciences, and List of Journal Articles in Documentation by Nippon Documentaion Association. Through them, we searched through journal articles concerning reference tools to statistics. Next we limited the objects of these studies to the following reference tools:

tools after W.W.II

tools only used for Japanese statistics

tools covering general subjects

tools concerning nation-wide statistics

As a result, twelve reference tools of statistics were chosen. They are numbered and shown in Table 7. After that we classified these tools by type, such as index and bibliographies, and analyzed them in the light of several comparative items. Next, the access points included in every reference tools are compared. Reference tools no. 11 and 12 are ommitted in the comparison, because no. 11 is a guidebook to statistical use and no. 12 is an annual report of the Administrative Management Agency which has responsibility for the government's statistics in general. Finally, periods covered by each reference tools were compared and we raised some points how improvements could be

made.

b. Results

Reference tools chosen were analyzed by several comparative items, and the results were tabulated in Table 8. The Table 8-1 has comparative items listed horizontally, and has vertical reference tool numbers corresponding to Table 7. The comparative Items a-c reveal the scope and policies of each reference tools. Items d-f reveal compositions and access points and Item g show other characteristics of them.

Next, access points of reference tools were compared from the viewpoint of retrieval objects, and the results are shown in Table 9. This Table has horizontal reference tools no. corresponding to Table 7, and has a vertical listing of retrieval objects and access points for the objects. It is noteworthy that the horizontal column of this Table is the same as the vertical column of Table 8-1. Table 9 aims at comparing reference tools by access points which may be used in search of statistical data. For example, when a user seeks a statistical table, he/she should check to column A,"statistical tables." Then, if the user seeks an item by subjects, the reference tools no. 1,2,4,8,10 can be useful. Numbers 1 and 2 are esjpecially useful in directing the user the statistical table which he/she may needs.

In Figure 2, periods covered by each reference tools are compared. A broken line shows reference tools which contain private statistical data, while an unbroken line shows reference tools which contain governmental statistical data. Reference tool no. 4 contains both of governmental and private statistics, and

so is shown with a partially broken line. The earliest publication dates of reference tools no. 7,3,10 are not clear and so their beginning points are shown with dotted lines. Incidentally, reference tools no. 1,2,10,12 are excluded from this Figure, because they are published annually.

c. Considerations

(1) Comparison by comparative items

The results of Table 8 shows that there are 2 statistical digests, 1 catalog, 6 bibliographies, 1 index, and 2 categories called others. This classification by type is independent from their titles as we classified them by their contents. Here, the term catalog indicates tools which include the location of materials, and the term bibliography indicates tools which only contain bibliographical information. Also, the comparative item f shows that most reference tools have either information from statistical investigations or bibliographic information from reports as main data.

It may be said that reference tools containing information of investigations, or for bibliographic information of reports are sufficient. However, there are no tools which link this investigative and bibliographic information. In other words, statistical investigations and bibliographic information of the reports are not well linked in statistical reference tools.

(2) Comparison of access points of the tools from the viewpoint of statistical data retrieval.

Table 9 shows the following: When an investigator uses a statistical table, subjects and titles of reports are useful as access points. This is possible because many of the reference

tools are organized by subject. In contrast, statistical tables can not be accessed by keywords or the name of investigating organizations.

When a user seeks infromation about investigations, access by subject is relatively easy. The information about investigations, however, is not easily retrieved. Access by keywords is impossible.

Finally, when a user seeks for statistical reports, access by title, subject, keyword, name of investigation, and name of investigating organization are all possible. The user can access any of these items.Consequently, if these 12 reference tools are prepared completely, a user can access statistical data with any access points which may come to mind.

(3) Comparison of Periods covered by each reference tools

Statistical laws was enacted in 1947, and several kinds of reference tools were published in the 1950's and 1960's. By 1975, most of the main reference tools had been published and since 1975, reference tools have been published annually. Various types of reference tools had been published by 1975, such as bibliographies, catalogs and indexes. In contrast to this, the reference tools which have been published since 1975 are only statistical digests and bibliographies. In other words, there are no catalogs and indexes which cover statistical materials published after 1975. Consequently, it can be said that access by free words to statistical materials published in this decade is impossible, and that the location of them is neither publicized nor cataloged.

A Major problem concerning statistical reference tools of Japan is the lack of locative information on statistical materials published after 1975. This locative information should be implemented as soon as possible. For further improvement of reference tools in Japan, the strengthening of catalogs and indexes, linking of investigative information and bibliographical information, strengthening of tools which contain main sources of investigative data, and repletion of access points to investigative information.

Reference tools no. 11 and 12, while not quite useful for any specific statistical data retrieval, are valuable for fundamental knowledge of statistical use and for trends of governmental statistics.

III. Summary and the Present Trends toword Mechanized Statistics

To summarize all the results of research-1,2 and 3, there are various kinds of statistics covering multiple subjects which are publicized without long time-lag. Futhermore, reference tools to these statistics are well prepared, although they have several problems which need to be taken care of. At present, there is a trend toward mechanized statistics.

1. Trends toword Mechanized Statistics

In statistical use and statistical production, mechanization appears to be advancing in the former, and delayed in the latter. Here, the merits of statistical mechanization are considered as follows:

a. With the time-sharing system of mainframe computers, many users can access statistics at the same time. If statistics are

available only in printed form, this kind of sharing is not easy.

b. The speed in which statistical data is made available can be improved. If statistical data are circulated via online systems immediately after their production, broader uses can be made of them.

c. Efficiency of access can be improved via online retrieval systems for statistical databases. General manual searching could be excluded.

Statistical mechanization has already begun in some areas and statistics available in magnetic tape form (in lieu of printed forms) are now circulated to the public. Also the tabulation of statistical investigations is done by computers in the government sector. However, the data input into government computers cannot be circulated to the public for several reasons. When one says "statistical mechanization," he/she must consider not only statistical data input to computers, but also online retrieval systems for the data. Having data input to computers does not improve the statistical data flow, unless a well designed online retrieval system is also available. Online retrieval system for accessing governmental statistics could contribute to statistical information flow in Japan, if it were implemented.

In order to increase the availability of statistics in Japan, the expansion of the means of use and access to not only governmental but also private statistics would be necessary. As far as private statistics are concerned, there are not enough reference tools and even comprehensive lists of the statistics do not exits. Since some private statistics contain valuable data

which is otherwise impossible to get, publishing and arranging these private statistics is desirable. Ultimately, government and private organizations should coorperate with each other, and then proceed to produce and circulate statistics. In other words, systematic organization of statistical activities underlies a well designed retrieval system and more active use of statistics.

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(status and future of governmental statistics system in Japan)

( ) : indication for contents of every article

Tables and Figures

Table 1 : Kinds of Statistical Materials

Kinds of Materials	Contents
statistical investigations' reports	raw data
statistical yearbooks, digests	edited and analyzed data
bibliographies, catalog of statistics	bibliographic information of reports, outline of investigations, collections
indexes of statistics	keywords in statistics

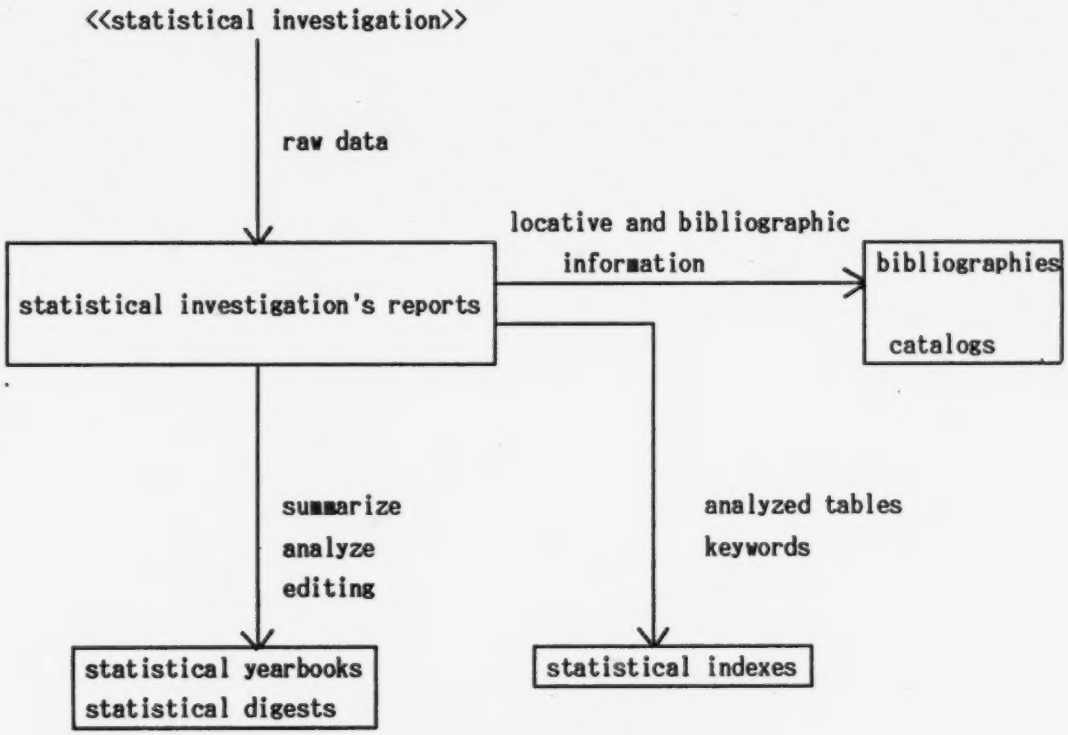


Figure 1 : Making Process of Statistical Materials

Table 2 Types and Numbers of Governmental Statisitics

types / subjects	Designated Statistics	Approved Statistics	Notified Statistics	Total	Ratio (%)
Population	2(2)	13	3	18(2)	2.4
Labour·Wages	8	50	16	74	9.9
Forestry· Agriculture· Fisheries	9(2)	80(1)	22	111(3)	15.0
Mining·Industry	10(2)	76	6	92(2)	12.4
Housing· Construction·Land	3	38	0	41	5.6
Commerce·Service· Trade	12(1)	47	0	59(1)	8.0
Transportation· Communication	5	38	8	51	6.9
Resources·Energy	1	11	1	13	1.8
Enterprises· Administration	3(1)	31	3	37(1)	4.9
Finance	0	4	23	27	3.7
Family expenditure Prices	4(1)	7	4	15(1)	2.1
Living·Environment	0	10	1	11	1.4
Medical care· Welfare.Hygiene	5(1)	82	21	108(1)	14.6
Education·Culture Science	6	28	9	43	5.8
Judical Affairs	0	0	13	13	1.8
Others	0	14	14	28	3.7
Total	68(10)	529(1)	144	741(1)	100.0
Ratio	9.2	71.4	19.4	100.0	

0162

Table 3 Classification of Statistics in the area of Education, Culture and Service

Subjects	No. of Approved Statistics	No. of Notified Statistics	Contents
Administration • Finance	1	2	•local education administration, local education expenditure, finance of private schools
Equipment	1	1	•equipment of public schools, university libraries
Teachers		1	•teacher's personnel changes
Students	5		•school life, athletic ability, child of transference, homecoming children, technical school students
Educational-Expenditure	1		•educational expenditure of parents
By Topic	3		•use of nursery school, student couceling
Total	11	4	

0163

Table 4-1 : The Reports of the 1980 Population Census of Japan(1)

Title of Publication	Contents	Volume
Vol.1 : Total Population	total population	1
Vol.2-1 : Results of the First Basic Complete Tabulation	population and households(whole Japan)	1
2-2 : Results of the First Basic Complete Tabulation	population and households(prefecture)	47
Vol.3-1 : Results of the Second Basic Complete Tabulation	occupation and specific households(whole Japan)	1
3-2 : Results of the Second Basic Complete Tabulation	occupation and specific households(prefecture)	47
Vol.4-1 : Results of Detailed Tabulation	detailed items(whole Japan)	1
4-2 : Results of Detailed Tabulation	detailed items(prefecture)	47
Vol.5-1 : Commutation	place of works or schooling of population by sex etc.	1
5-2 : Commutation	place of works or schooling of population by occupation	1
5-3 : Commutation	place of works or schooling of population by industry	1
5-4 : Commutation	means of transport	1
Vol.6-1 : Results of Tabulation on Internal Migration	basic characteristics of migrants	1
6-2 : Results of Tabulation on Internal Migration	occupation of migrants	1
6-3 : Results of Tabulation on Internal Migration	migrants and their households	1
Vol.7-1 : Results of Special Tabulation	industry and occupation	1
7-2 : Results of Special Tabulation	internal migration for three major metoropolitan areas	1
Special Volume : Densely Inhabited Districts of Japan	gravitation of population	1
Final Count : Population and Households	population and households	1
Final Report : Population of Japan	summary	1

Table 4-2 : The Reports of The 1980 Population Census of Japan(2)

Prompt Tabulation Series (3 vols)
1. Preliminary Counts of the population on the Basis of Summary Sheets
2-1. Prompt Report of the Basic Findings(Whole Japan)
2-2. Prompt Report of the Basic Findings(Prefectures)
Reference Report Series (7 vols)
1. User's Guide of Census Data and Materials Related to Enumeration Districts
2. Supplement to the User's Guide of Census Data and Materials Related to Enumeration Districs
3. Commuting Population
4. Population of Major Metropolitan Areas
5. Results by Population Size of Shi, Machi, and Mura, and of DID's
6. Results by Census Tract
7. Atlas of Census Tract Boundaries
Abridged Report Series (2 vols)
1. Population of Japan
2. Population of prefecture
Monograph Series (10 vols)
1. Stratification of Population
2. Internal Migration
3. Regional Distribution of Population
4. Employment Status, Type of Industry
5. Occupational Groups
6. Working and Schooling Population
7. Educational Level, School Attendance etc.
8. The Aged Population
9. Type of Households
10. Status of Housing
Population Maps of Japan Series (36 vols)
Statistical Maps on Grid Square Basis Statistical Maps (3 vols)

Table 5 : Publication Order of the 1980 Population Census of Japan

Report number	Contents	Counting object	Publication Year				
			1981	1982	1983	1984	1985
Prompt Report 1	total population	summary sheets	■				
Prompt Report 2	total population	1% sample	■				
Final Count	population and households	complete		■			
Vol.1	total population	complete		■			
Vol.2	population, households	complete		■			
Vol.3	occupation, specific households	complte			■		
Vol.4	detailed items	20% sample				■	
Vol.5-1	place of works, schooling(by sex etc.)	complete		■			
5-2	place of works, schooling(by occupation)	complete			■		
5-3	place of works, schooling(by industry)	20% sample				■	
5-4	means of transport	complete			■		
Vol.6-1	basic characteristics of migrants	complete		■			
6-2	occupation of migrants	complete			■		
6-3	migarants and their households	20% sample				■	
Vol.7-1	industry and occupation	1% sample				■	
7-2	migration(major metropolitan areas)	complete				■	
Special Volume	gravitation of population	complete			■		
Final Report	summary						■
Series	Reference Report Series(7vols)			———	———		
	Abridged Report Series(2vols)			———			
	Monograph Series(10vols)				———	———	———
	Population Maps of Japan Series(36vols)		———	———	———	———	- - - -
	Statistical Maps of Grid Square Basis Statistical Maps(3vols)					———	———

Table 6 : Publication Order of Items about Households and Household members

	publication year	1981		1982		1983	1984			1985
	report number	Prompt Report 1	Prompt Report 2	Vol.2	Final Count	Vol.3	Vol.4	Vol.6-3	Vol.7-2	Final Report
	count / ITEMS	summary sheets	1 % sample	complete	complete	complete	20 % sample	20 % sample	complete	
1	households	■			■					■
	ordinary households		■	■						■
	quasi-households			■						■
	family type of households			■			■			■
	mother-child(ren) households					■				■
	father-child(ren) households					■				■
	one aged person households					■				■
	aged couple households					■				■
	family nuclei						■			■
	relative households						■			■
	moved households							■		
	moved households(time of last move)								■	
	moved households(place of destination)								■	
2	household members	■		■			■			■
	ordinary household members(occupation)					■				
	ordinary household members(industry)					■				
	ordinary household members(sex)						■			
	ordinary household members(age)						■			
	ordinary household members(economic type)						■			■
	ordinary household members(type of building)						■			■
	related members						■			
	moved household members							■		
	moved related members							■		

1 : households 2 : household members

Table 7 List of Reference Tools

1. Statistical Handbook of Japan. Bureau of Statistics, Office of Prime Minister. Tokyo, Printing Office, Finance Ministry, 1985.318p.
2. Japan Statistical Yearbook 1984: the 34th ed. Statistics Bureau, Management and Coordination Agency. Tokyo, Japan Statistical Association, 1984. 834p.
3. Catalog of the Library of Bureau of Statistics. Office of Prime Minister. revised and enlarged ed. Library of Bureau of Statistics, Office of Prime Minister. Tokyo, 1973. 1021p.
4. The Comprehensive Bibliography of Statistical Survey: Guide for users of statistics. Minobe, Ryokichi; Shichiro, Matsukawa. Tokyo, 1956. 466p.
5. The Comprehensive Bibliography of Statistical Survey. Administrative Management Agency. Tokyo, National Federation of Statistical Association, 1983. 571p.
6. Synopsis of Materials of Private Statistics. Federation of Economic Organizations. Tokyo, 1971. 287p.
7. Bureau of Statistics Catalog. Bureau of Statistics, Office of Prime Minister. Tokyo, 1966. 116,16p.
8. General Index to Japanese Statistics. Association of Special Libraries. Tokyo, Toyo Keizai Shinposha, 1959. 1483p.
9. General Index to Statistical Information. Bureau of Statistics, Office of Prime Minister. Tokyo, Japan Statistical Association, 1978. 47,242,331,31p.
10. Index to Statistics in Japan. Kawashima Kenkyu Jimusho. Tokyo, Nichigai Associates, 1975. 1703,179p.
11. Guide Book of Use of Statistics. Kawashima, Masamitsu. Tokyo, Nichigai Associates, 1977. 518p.
12. Annual Report of Standards of Statistics. Bureau of Statistics, Office of Prime Minister. Tokyo, Administrative Management Agency. 264p.

0168

Table 8-1 Comparison of Access Tools by Comparative Items

Items / Access Tool No.	a. Type	b. Coverage	c. Periods covered	d. Latest edition	e. Order of arrangement	f. Main data	g. Others
1	A	fundamental statistics on all fields	latest tables	annually	order by subject	tables	Sources are cited under each table. Std. of living index, list of statistics by governmental agency are included.
2		fundamental statistics on all fields	latest tables as possible	annually	order by subject	tables	Sources are cited. Each table has general explanation. Key statistics, index, guide to sources are included.
3	B	Japanese books, 71000 Foreign books, 50000 Catalog of Bureau of Statistics	Japanese books-72 Foreign books-82	1974 revised edition	1st. pt. reports 2nd.pt. books 3rd.pt. archives Order by NDC.	report	Comprises 3 vols. Vol. of Japanese books has author & title index.
4	C	public statistics 1576, labour association statistics 197	1951-55	1956 ed.	1st.pt. public agency 2nd.pt. private agency Order by subject.	investigation	Clarification of process of investigation.
5		designated, apporoved, notified statistics	Each covers every 5 years.	annually	arrangement by unique classification	investigation	
6	D	reports by 320 economic societies, etc.	-1970	1971 out of print	Order by type of occupations	report	Based on response of 320 organizations.
7		materials published by Bureau of statistics	1871-1966	1966	Order by investigation	report	
8		statistics of central public agency etc.	-1959	1959 out of print	Order by unique classification	table	

Tool No.	a.	b.	c.	d.	e.	f.	g.
9	D	statistics of public & private agencies	1973-76 (1978ed)	1956 ed. 1959 ed. annual suppl.	Order by editor	1st pt report 2nd pt table name	
10	E	144 kinds of reports, 540 vols., 24079 tables	latest reports in 1975	1975, 1976 suppl.	Index words are ordered by Japanese alphabet	1st pt index 2nd pt list of report	Investigative items are indexed. Index includes main keywords, reference, sub-keywords.
11	F	user manual		1977	1st pt. user guide 2nd pt. reference books 3rd pt. reports 4th pt. foreign statistics	guide-book	For beginners, includes statistical law, reference books with general explanations.
12		summary of activity of Administrative Management Agency	whole the year	annually			

A: digests of statistics
B: catalog
C: bibliography of investigation
D: bibliography of report
E: index
F: others

Table 8-2 Comparison of Mentioned Items in Reference Tools

Reference Tool No. / Mentioned Items	1	2	3	4	5	6	7	8	9	10	11	12
investigation's name				◇	◇		◇	◇				
investigation's date				◇	◇	◇		◇				
investigative organization				◇	◇			◇			◇	
investigative constituent				◇	◇				◇			
investigative purpose				◇	◇							
tabulation method				◇	◇				◇			
publicity duty				◇	◇	◇						
investigation's object				◇	◇				◇			
investigative method				◇	◇							
investigative items				◇	◇							
name of statistical table	◇	◇						◇				
contents of table	◇	◇						◇				
title of report			◇			◇	◇	◇	◇	◇	◇	
publication date			◇			◇	◇		◇	◇		
publication frequency							◇			◇		
contents of report			◇			◇	◇					
editor of report			◇						◇	◇		

0171

Table 9 Comparison of Access Points of Reference Tools of Statistics

Purposes	Access Point \ Reference Tool No.	1	2	3	4	5	6	7	8	9	10
A	Subjects	★	★		☆				☆		☆
	Keywords										☆
	Names of Investigations					☆		☆			
	Names of Investigative Reports			☆			☆	☆		☆	☆
	Names of Investigative Organizations				☆					☆	
B	Subjects				★	★				★	
	Keywords										
	Names of Investigations					☆					
	Names of Investigative Reports									☆	
	Names of Investigative Organizations									☆	
C	Subjects			★			★				
	Keywords										☆
	Names of Investigations							★			
	Names of Investigative Reports			★			★	★			
	Names of Investigative Organizations			★							

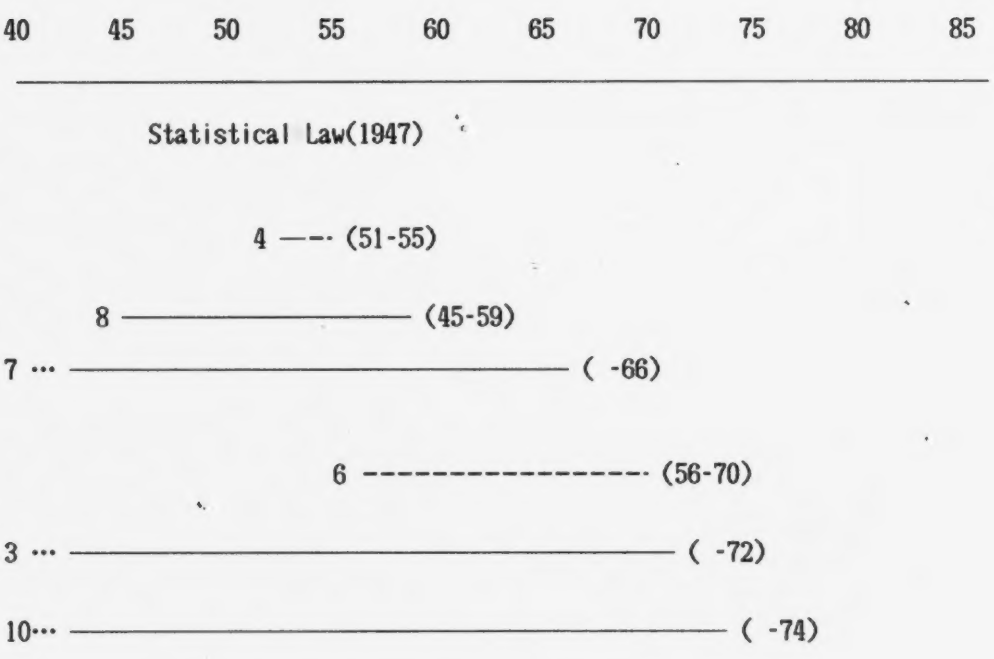
A : Statistical tables, B : Items about investigations, C : Bibliographic information of statistical reports

★ the reference tools which have user's seeking information

☆ the reference tools which indicate locations of user's seeking information

0172

Figure 2 Comparison of Period Covered



- Statistical Yearbooks annually publish after 1975.
- A broken line indicates reference tools which include private statistics.

IFLA GENERAL CONFERENCE, TOKYO

Division: Management and Technology

Section: Statistics

1986

19-STAT-3-E

Public Library Statistics in Libya

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65

Library statistics are as important as library services and operations or any other library procedures, since they are a means of evaluating library effectiveness. Currently, library statistics are getting more and more important after all the tremendous increase in library resources, services and budgets. Librarians need to know how effective their operations and services are, and how effectively they are spending their budgets. Library statistics are the main method, if not the only one, which helps librarians know how successful their libraries are.

More than three decades ago, Moroney[1] wrote, "Wherever anything is measured numerically, wherever there is an attempt, however rough, to assess anything in the form of numbers, even by the simple process of counting, then there begins to arise the necessity for making judgements as to the significance of the data and the necessity for traffic rules by which the flow of information may proceed smoothly and purposefully".

At the 1982 IFLA Conference in Montreal[2], the paramount importance of library statistics for evaluating and planning

(1). M.J. Moroney. Facts from figures, 3rd ed. London:Penguin,1956

(2). Maria B.P. de Carvalho,"Aspects of Library Statistics in Brazil" 48th IFLA General Conference, Montreal, Canada, August 22-28, 1982. p. 1.

library activities at local, national and international levels was emphasized. Moreover,"... in developing countries statistical data on libraries can also be one of the measures of the stage of cultural development of the country." Library statistics are gaining momentum and broadening into the wider scope of information statistics. In this respect, UNESCO is sponsoring a research project aimed at devising information utilization potential and its index which is composed of over 200 statistical indicators published in national and international year books(3). In addition to this, it is preparing a guide to the collection of statistics on scientific and technological information and decoumentation.

According to the Oxford English Dictionary, the term statistics means, "numerical facts or data collected and classified..... the data are things known or assumed as facts, and made basis of reasoning or calculation." Libraries have been collecting statistical data and publishing annual reports covering readers, staff, resources, services, and other operations. These data are presented in a variety of tables, graphs, and lists. Previously, their value was debatable, as library administrators followed their common sense and subjective experience. The inflaction of the 1970's affected libraries badly, as they were caught between soaring prices and budget cuts. Consequently, operations research replaced traditional techniques of library administration & economize in spending their

(3). F.W. Lancaster. Plan for the collection of data to form a set of statistical indicators of scientific and technical communication in Brazil. Rio de Janeior, IBICT Studies and Procts division, 1978. 48 p.

budgets and/or build better information systems and networks. Library cooperation and information networks became necessities to overcome the severe financial problems, and to help build more comprehensive library resources for better information services.

In this respect, library statistics can contribute significantly to building effective information systems as:

1. Statistical measures provide objective descriptions of existing library situations needed to determine whether cooperation is feasible.
2. In the course of planning process, statistical data can help participants to identify the direction, formulate objectives, and specify the details of the cooperative program.
3. When the system is operational, statistical data are needed for evaluating its effectiveness, and showing its weaknesses(4).

So library statistics are quite necessary for library planning as well as evaluation. In Libya, all types of libraries have been collecting data. Public libraries as well as cultural centers which have public library functions, have been established wherever there is need for information services, in this huge and sparsely populated country.

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(4). Mary E. Anders. "Statistical information as a basis for cooperative planning." Library Trends, V. 24, no. 2 (Oct., 1975), 229-244.

Measures of public library service are rather difficult to secure in relation to other types of libraries[5]. However, the Secretariat of Culture has been establishing library services in the communities which ask for them. These libraries and service points are under constant supervision. Statistics are collected annually, analysed and tabulated for the purpose of evaluation and planning. Questionaires are sent to the existing 181 libraries and cultural centers for statistical measurements. They cover a variety of factors like staff, buildings, services, and resources. The Secretariat considers these statistical data as feed back or tests for the effectiveness of the public library services. The following tables cover readers' activities and their reading interests, mentioned here as examples of public library statistics in Libya.

1. Readers and borowers in five cities

Locations of Cultural Centers	1980	
	Readers	Borowers
1. Tripoli	81752	8029
2. Zawiyah	58147	13565
3. Khums	69151	11583
4. Misurata	82148	11885
5. Gheryan	91911	5745
Total	383109	50812

(5). Ibid.

2. Reading interests in Libya

Subjects	No. of Volumes	Percentage
1. Literature	57506	15.01 %
2. History and Geography	48696	12.71 %
3. Religions	43205	11.27 %
4. General Works	40274	10.51 %
5. Social Sciences	38053	9.93 %
6. Pure Sciences	31764	8.29 %
7. Philosophy and Psychology	31140	8.12 %
8. Linguistics	31019	8.09 %
9. Arts	30994	8.09 %
10. Technology	30458	7.95 %

The figures[6] in the above tables do not look high in comparison with those in advanced countries, especially in large metropolitan centers. The above libraries serve communities do not exceed few hundred thousands. Figures in Table one indicate that the percentages of the public who use their libraries vary, between 25% - 50%. In comparison with figures in developing countries, these ratios are very high.

Table number two indicates the reading interests of the public. The favourite areas are humanities and special sciences, while technology is at the bottom of the list. I assume that this

(6). Annual Cultural Activities: Socialist People's Libyan Arab Jamahiriyah. Arab Journal of Culture, V.4 (Sept. 1984), 150-159.

is the case in most of the third world countries.

Library statistics are collected annually not only to measure the effectiveness of the existing libraries and cultural centers, but also to provide the necessary information for maintaining and developing information services in the country. Depending upon the collected data Libyan cultural authorities put new criteria(7) to extend information services to other communities, either did not have library services before, or the existing ones are ineffective. It was decided that library extension should be through more modern cultural centers which offer a variety of services in addition to public library functions. These criteria are as follows:

A) 1. A modern cultural center should be established in every municipality center city. If the existing one is old or inappropriate, i.e.it must be renewed. All such cities should have at least one center built mainly for that purpose.

B) 2. All cities in Libya which are populated by seventy thousands and more should have more than one modern cultural center to provide adequate information services.

3. As a result of the two criteria mentioned above, the authorities decided that fifty-two modern cultural centers should be opened during the years 1981 and 1982. Among those 52 centers, 21 should be completed in 1981, and the remaining 31 should be complete before the end of 1982.

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(7). Secretariat of Information, Cultural Affairs Section, New Criteria for opening more cultural centers through the five-year plan, 1981-85.

C) 4. In the current five-year plan, it was decided that all cities populated by ten thousands and more must have at least one modern cultural center.

D) 5. Cities populated by five to ten thousands, are included in the current five-year plan also, and pending more data for cultural planning.

6. It has been decided that the number of the existing public libraries and cultural centers should double during the second half of the current five year plan.

7. According to the encouraging statistical data, the person incharge of the cultural statistical data at the Secretariat declared that they are obliged to provide the necessary information services to the citizens wherever they may in the huge country, through some convenient and flexible means like book mobiles, and service points supplied with collections regularly.

IFLA GENERAL CONFERENCE, TOKYO

Division: Education and Research

Section: Library School and Other Training Aspects

1986

20-TRAIN-1-E

Preparing Librarians for the 21st Century: Study Abroad

by

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KEYWORD(S):

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Foreign students
Education for Librarianship
Evaluation of Study Abroad
Criticism of Study Abroad

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This paper addresses one aspect of the problem of providing the skilled library and information professionals necessary for the establishment and operation of quality library and information services in the 21st century. That aspect is the educational preparation of professionals in overseas library and information science schools and training programmes.

It is assumed that educational preparation in local high quality library and information science programmes is the preferred option, but there may be reasons for students to travel abroad to study.[1] Firstly, the appropriate courses may not exist in the home country, may be of lower quality, or may have admission quotas. The International Guide to Library and Information Science Education reveals the large number of library and information science schools which have been established in the last twenty-five years.[2] It also lists seventy-four countries which seem not to have any library and information science schools. The local situation may not call for the setting up of a school; it may be cheaper to send students abroad to study as an interim measure.

Some regional schools have been set up in developing countries to meet local regional needs. However these regional schools do not appear popular with students. Thus in Nigeria it is noted that "There is a strong feeling that, if one has to go abroad to study, it is better to go to the advanced western countries to catch up with the latest developments rather than go to another developing country - no matter how close the latter is, and how much cheaper it is to study there".[3]

Secondly, a period of study overseas may be seen as a valuable addition to studies already taken in the home country. For example, the local curriculum may not reflect the latest developments in the information

science area, so students may go abroad for upgrading courses or short training programmes. Many information scientists in developing countries have been educated abroad in USA, UK, USSR and other advanced industrialised countries.[4] Also only first level education may have been established, so librarians and information scientists may need to go abroad for higher degrees or advanced training programmes. This may be particularly appropriate for preparing faculty members for library and information science schools.

There may also be social and political forces at work. Study abroad may be used as an avenue for migration to another country.

There are advantages in studying at well regarded overseas library schools in developed countries: there are well-qualified faculty and good facilities, the qualifications gained have international recognition and there is exposure to the latest technical developments. In the same way short term study programmes or internships abroad provide upgrading and continuing education opportunities for librarians.

International Context

To put the numbers of students studying abroad in the library and information science field into an international perspective, we should consider the number of students studying abroad worldwide. UNESCO collects these statistics, using as the definition of foreign student: "a person enrolled at an institution of higher education in a country or territory of which he is not a permanent resident". The total number of foreign students in the early 1980s in forty-five countries, estimated to attract about 90% of foreign students, was 860,585.[5] This is more than

three times the figure twenty years ago. It is estimated there are a million students studying abroad, and the numbers are continuing to grow. In addition to those undertaking formal study at a higher education institution, there are probably just as many undertaking informal study abroad, in training programmes, study tours or internships.

The countries receiving the most foreign students in the early 1980s were the United States of America, 326,299; France, 110,763; Federal Republic of Germany, 71,393; USSR, 62,942; United Kingdom, 50,684; and Canada, 35,566. Thus foreign students were concentrated in a handful of industrialised nations with plentiful higher education facilities and relatively accessible languages. Only about 14% of foreign students were enrolled in developing countries.

These foreign students represented only 2.3% of all students enrolled in higher education worldwide.[6] Thus expansion of higher education in developing countries is keeping pace with expanding student demand. About 40% of foreign students came from Asia, 20% from Europe, 16% from Africa, 11% from North America, and 6% from South America.

Numbers of Foreign Library and Information Science Students

UNESCO no longer publishes statistics annually on field of study of foreign students, so we have to go to statistics collected by individual countries to find out the numbers of foreign students studying in various subject areas. The numbers of foreign students in library and information sciences schools are such a small proportion of total foreign student numbers in any country that it is difficult to isolate them in official statistics. Thus, in the Statistics of Overseas Students in the

United Kingdom collected by The British Council, librarianship is included in the category 'Professional and vocational studies'.

There are also statistics available from funding agencies. Thus UNESCO has awarded over five hundred fellowships for study in the librarianship, documentation and archives area. These comprise about 5% of the total fellowships awarded by the organization.[7] They went mostly to students from developing countries.

For some countries information on foreign students is available from the professional associations themselves. The Association for Library and Information Science Education (ALISE) publishes excellent statistics for the United States and Canada in the annual Library and Information Science Education Statistical Report.[8] Thus we can find out that in the 1983 academic year there were a total of 478, 162 male and 316 female, foreign students, 3.9% of 12,391 students enrolled in USA library and information science schools which were members or associate members of ALISE. There are also some students enrolled in non-affiliated schools. Overall, foreign students form about 2.3% of the total student population in the USA, so the percentage for library and information science schools is a little above the norm. The 76 foreign doctoral students, 44 males and 33 females, formed 15.9% of American library and information science doctoral students. This is the same percentage as foreign students comprised of all doctoral completers in the USA in 1980-81.

In Canada in 1983 the 35 foreign students comprised 3.2% of the 1,102 students enrolled in the seven Canadian library schools. Overall, foreign students account for about 10% of total higher education student

numbers in Canada. There were 14 males and 21 females amongst foreign students at library schools. The 1 female foreign student of the 21 students enrolled at the doctoral level represented 5% of Canadian doctoral students.

For the United Kingdom statistics for newly enrolling library school students are collected by the Education Committee of the Library Association. For students commencing all librarianship courses in the 1984/85 academic year we find 158 overseas students, 84 males and 74 females, of a total of 1239 students newly enrolled, or 12.8%.[9] Foreign students form about 10% of the total student numbers in the UK. Of those studying for a master's or doctoral degree there were 66 foreign students, 35 males and 31 females, of a total of 141 students newly enrolling, or 46.8%. In 1977/78 foreign students formed 37% of those studying for higher degrees in the UK, and the proportion had been rising.[10]

When we look at enrolment figures for the 1980s in library and information science for the USA and UK we see similar trends. In the UK the number of foreign students commencing courses had fallen from a high of 172 in the 1981/82 academic year to 128 in 1983/84, and risen again in 1984/85 to 158. Numbers of overseas students declined sharply in the UK with increases in student fees after 1980. For the USA the total number of foreign students enrolled was 550 in 1981, fell to 468 in 1982 and rose slightly to 478 in 1983.

Foreign students in library and information science programmes in the USA, Canada and UK seem to mirror trends overall for foreign students in these three countries. One point of difference was the number of women.

Women formed about 23% of all foreign students worldwide in 1973 and the proportion of women was growing slowly. We would expect more women in a female dominated field like librarianship and information science and we see that there were more women than men amongst foreign students in library schools in Canada and the USA, but not in the UK.

We can gather further information about foreign students in library and information science. In the USA the largest number of students came from Taiwan for the period 1979 to 1982. Other countries sending large numbers included Iran, Canada, India, Nigeria, China, Korea and Saudi Arabia. Some library schools attracted large numbers of foreign students; these included those at the universities of Case Western Reserve, Pittsburgh and Indiana in the United States.[11] In the UK the College of Librarianship Wales had 38 foreign students in 1980/81.

Some library schools attract students from particular regions. Statistics from the French language École de Bibliothéconomie et des Sciences de l'Information at the Université de Montréal show that foreign students for the period 1971 to 1985 came mainly from the Maghreb region of North Africa, and Francophone Africa, as shown in Table 1.

TABLE 1

FOREIGN STUDENTS

Université de Montréal, École de Bibliothéconomie

et des Sciences de l'Information

1971-1985

	Maghreb region, North Africa	Francophone Africa, and Indian Ocean	Latin America and Caribbean	Europe	Other	Total
1971-	Tunisia (3)	Cameroun (1)		France(1)	USA (1)	
1975		Ile-Mazurice (1)			Laos(1)	10
		Rwanda (2)				
1976-	Algeria (1)	Bénin (2)	Haiti (2)	France(1)	Vietnam (1)	
1980	Morroco (2)	Cameroun (2)	Mexico (1)			
		Côte d'Ivoire (4)				20
		Gabon (1)				
		Rwanda (2)				
		Sénégal (1)				
1981-	Morroco (3)	Burundi (2)		France (1)	Lebanon(1)	
1985	Tunisia(16)	Cameroun (1)				
		Côte d'Ivoire (3)				
		Guinée-Conakry (3)				33
		Niger (1)				
		Sénégal (2)				
TOTAL	25	28	3	3	4	63

Source: Professor Lajeunesse, École de Bibliothéconomie et des Sciences de l'Information, Université de Montréal.

Some countries send their students to study in a variety of overseas countries. Thus it is reported that overseas qualifications from the UK, India, USA and Canada were represented amongst staff in Sri Lankan libraries, before the introduction of local courses in Sri Lanka.[12] In Malaysian university libraries there is reported to be an adequate number of professionally educated staff, most have attended library schools in the UK and USA.[13]

The mix of overseas qualifications in Nigeria is revealed by a survey of librarians working in a variety of libraries there. A total of 267 usable responses revealed that 59.7% of librarians with professional qualifications had obtained them in Nigeria. Ninety-seven librarians, 36.9%, had been trained abroad; sixty-three in the UK, twenty-six in the USA, nine in Ghana and eight in other countries.[14]

Training Programmes

There are opportunities for foreign librarians and information scientists to attend short courses and study tours abroad. Thus The British Council arranged for 285 library related visits to the UK in 1976/77. Most visitors, 170, came in groups from European countries, with 115 coming from forty-two countries in other regions. In 1984/85 the number of library related visitors was 276.

One of the programmes offering support for library related visits to the USA is the Fulbright Program, an educational exchange scheme administered by the United States State Department. It provides travel funding for

study, research and observation visits. In 1980-81 there were twenty-nine grants in the library and archives area for visitors to the United States.

International organizations such as Unesco have organized short courses and training programmes for librarians and information scientists from developing countries. UNESCO reports show it had sponsored over one thousand study trips in the librarianship, archives and documentation area, up to the early 1980s.

Funding

Who was funding these foreign students for formal study or short term programmes? There were a variety of funding sources for foreign students including both receiving government and home government funding, funding by individual libraries, both in the donor and receiving countries, scholarships available from overseas universities, funding available from international organizations, and from private foundations. Funding provided by receiving governments is usually associated with foreign policy programmes, which are politically determined. Also many students are self funded, either from their own or their families' resources.

Several of the countries supplying aid programmes for foreign students have been cutting back funding. The United States government has cut back funding for foreign students. The British Council complains in its 1984/85 Annual Report that overall its funding has been cut more than 20% in real terms since 1979/80. Also several countries have recently imposed higher fees for foreign students attending higher education institutions.

A library personnel survey in Tanzania in 1981 showed a need for 212 professionals by 1984. The surveyor thought this number unlikely to be available. The five year plan of the government of Tanzania had only allocated fifteen scholarships for library and information sciences study, and scholarships from foreign sources were hard to find.[15]

Evaluation of Study Abroad

Evaluation of study abroad can be considered from the viewpoint of the student or the funding agency.[16] From the viewpoint of the student the objectives to be evaluated may be completing the course or training period, gaining a formal qualification or new expertise, and then applying the new knowledge and skills. Evaluation from the viewpoint of the funding body would be according to the objectives of the funding body, which would also include the successful completion of the study period abroad and the application of new knowledge and skills on return home.

Implicit in the purpose of funded study and training programmes abroad is that, by exposure to the principles and practices of more advanced library and information services, these foreign students will change their views on librarianship and information science. Their conception of themselves as librarians and information scientists will enable them to become effective change agents on their return to their home countries. One of the ways change will occur is through borrowing and adapting of ideas and technology from abroad.

The classic study of change in the library field was that of J. Periam Danton, titled United States Influence on Norwegian Librarianship

1890-1940 (Berkeley: University of California Press, 1957). Danton looked at the channels for adoption of American ideas of library service: librarians who studied at American library schools or worked in American libraries and then returned to Norway, the printed word and conferences.

The problems met by foreign students in library and information science courses and training programmes have much in common with those of all foreign students. Poor mastery of the language of instruction is a major problem for students. Most foreign students have financial problems. Personal problems such as loneliness and homesickness are coped with in a few weeks time. There may also be problems with unfamiliar teaching and assessment methods used in the library and information science schools. Most foreign students need a longer period of time to complete course requirements than local students. They also want to have some practical experience in addition to academic studies.[17] There are also complaints about the curriculum followed in library schools. Foreign students need flexibility in putting together an appropriate programme.

For the education received abroad to be applied effectively at home, there must be a good match of the person selected to study abroad, of the course or training undertaken in a foreign country, and of the position occupied on return to the home country. Evaluation studies show that older people with work experience, already employed, and returning to an appropriate position usually make effective use of knowledge gained abroad.

Library experts have endorsed the selection of mature, flexible people for study in overseas library schools. In 1966 Lester Asheim, who had

just completed a five-year term as director of the International Relations Office of the American Library Association, noted that young, immature students could return from a period of study and training abroad with unreal expectations of status, resources, and response from the local community.

In 1982 Eileen Goldstein, referring to the problems faced by American-educated library and information science personnel from Mexico, recommended work experience at home before study abroad, otherwise students would return with unreal expectations of what could be achieved in a home environment with, "a lack of telephones, poor postal services, unpredictable electricity, deficient bibliographic control at a national level, and a basic unfamiliarity with library and information services among staff as well as management."[18]

Where education and training are well planned and integrated into large projects, with follow up assistance, then there is most chance of success. This is illustrated by the successful Carnegie Corporation of New York library programme in New Zealand in the 1930s.[19] Librarians were sent abroad for study and observation trips as part of a large project which included a survey, money for collection building and support for the New Zealand Library Association.

Evaluation of study abroad as it related to educational development in the early 1970s led to recommendations for integration of study abroad into development programmes of individual countries. Some countries seem to be developing better planning of study abroad in terms of meeting national development objectives of home countries. However there appears still to be a need for developed countries to give guidance to developing

countries in selecting an appropriate educational programme for students to fit the needs of the home country.[20]

There appear to be few evaluations of study abroad in terms of contribution to library development in the home country. Carl Keren and Larry Harmon reviewed scientific and technical information services in developing countries, and concluded that, "we could not find any exhaustive paper that both evaluated past training efforts and proposed ways to make education and training more effective".[21] This was in spite of the emphasis on education and training in assistance from aid agencies.

There have been some qualitative evaluations of study abroad in the library and information science area. Personal evaluations of returnees must be favourable because of the constant stream of foreign students who continue to go abroad for library and information science education. Also contributions made by librarians and information scientists in their home country after study abroad are praised by observers.

A suggestion of the importance of individuals who had been abroad for study and/or observation trips in the development of library services is given by a comparison of New Zealand and Australia in the 1930s.[22] Both countries share common backgrounds, and both received similar assistance from the Carnegie Corporation of New York in the 1930s to improve library services. This included grants for study and observation trips to the United States, some fellows also travelling to the UK and Europe.

In New Zealand in the period 1932 to 1937 all librarians in positions of importance had been abroad on study and/or observation trips. A smaller number from Australia went abroad, only one attending library school in the United States. New Zealand made a much better response to the Carnegie Corporation aid programme in the 1930s than Australia. This can partly be attributed to the problems in Australia of supplying library services in a vast, sparsely populated area, with state government divisions. However from a comparison of Australia and New Zealand there seems to be a need for a critical mass of librarians, transformed into change agents by study and travel abroad, to bring about change. One or two people sent in isolation can achieve little on return, but if a few, a critical mass, are sent, then change in terms of acceptance of new ideas and technology can be achieved.

Criticism of Study Abroad

A reassessment of international aid efforts in library and information science has paralleled the reassessment of educational aid programmes, which has occurred since the early 1970s. Particularly questioned has been the relevance of higher education in advanced industrialised countries to students from developing countries. Also raised has been the concept of appropriate technology. Developing countries themselves should choose what kind of technology is appropriate for adoption, with decisions made in relation to local needs.

Borrowing of expertise from another country usually brings hostility because of the connotations of cultural imperialism by the donor country. Cultural imperialism is a term implying the conscious imposition of a culture or idealogy by one society on another. This

charge has been applied to governments and agencies aiding library and information services development, including access to study abroad.

An example of the criticism of the development of Western-style libraries and information services is given by a Nigerian librarian Adolph O. Amadi in his book African Libraries: Western Tradition and Colonial Brainwashing (Metuchen, N.J.: Scarecrow Press, 1981). He argues that the adoption of literacy, books and libraries has contributed to brainwashing, the imposition of the ideas and techniques of Western society into traditional oral cultures.

There has been questioning of the relevance of the curriculum in library and information science schools in advanced countries for students from developing countries for some time. Tefko Saracevic asked in a paper he gave in 1982 whether "educating people from developing countries in U.S. style information sciences is a wasteful irony, if not even a cruel folly?" He concluded the answer was yes, if only the past and present situations were considered, but no, if the future situation in developing countries was considered.[23]

Relevant education for both local and foreign students needs to have "an openness to and acceptance of complexity, uncertainty, interdependency, limits, and contradictions."[24] If the education received in library schools by foreign students involves principles rather than culture-specific practices, together with problem solving skills and management training, then returnees ought to be able to bring about change appropriate to their own country. They should also be able to evaluate technology in terms of their own community.

Brain Drain

There is a worldwide market in internationally recognized professional skills, yet it is estimated only 2 or 3% of professionals have migrated from their home country to live and work in another country. Developing countries have been anxious about the loss of their scarce resources of well-educated personnel to developed countries, because of the negative effects on development efforts. The major receiving countries have been the USA, UK and Canada, and since 1973 the members of the Organization of Petroleum Exporting Countries (OPEC) have also recruited overseas professionals.

The main route to this brain drain for professionals in developing countries is to study abroad in developed countries. Careful selection of those sent abroad to study should cut brain drain losses. Studies show that older students, with strong ties to their homes, and those sponsored by their home governments are likely to return home.[25] The immigration laws of receiving countries can also help stem the brain drain.

It appears that brain drain is a problem in the library and information science area. Saudi Arabia recruits library and information workers from abroad; first from Arab countries such as Egypt, then from other Moslem countries such as Pakistan, and last from Western countries. It is presumed that some of these skilled library and information workers had been trained abroad.[26]

In a review of Pakistani librarianship in the 1970s brain drain is said to be hindering development efforts. Senior faculty members from the

library schools have gone to work in Nigeria and Saudi Arabia. Also loss of library personnel to rich OPEC countries is named as the chief factor retarding library development in Pakistan.[27]

Unsubstantiated statements have been made that many foreign students at American library schools do not plan to return home, but to convert non-immigrant visas to immigrant status, or return later to the United States or another country. Only 6 of the 63 foreign students who attended the library school at the University of Montreal in Canada in the period 1971 to 1985 have remained in Canada: 1 out of 10 for the period 1971-75, 3 out of 20 in 1976-80, 2 out of 33 in 1981-85.

To throw light on the debates about brain drain the United Nations Institute for Training and Research (UNITAR) commissioned a multinational comparative study of professional personnel from developing countries who have studied abroad. It was found that most students plan to return home; of those professionals employed in developed countries, some plan to return home, and those professionals already at home plan to stay there. Women rather than men studying abroad are contemplating migration to a developed country.[28] As there are more women than men among foreign students in library and information science programmes, one would expect some students to wish to migrate. For the UNITAR study, when professional reasons for wishing to emigrate were considered, librarianship showed above the average in one area only, giving the reason of the poor status of professionals in pay and prestige.

The current demand for those with information science skills, together with the wish of women who have studied abroad to migrate from developing countries, may create a climate for brain drain at present. Few would

blame those whose professional qualifications were being underutilized, or those being discriminated against in their home country on sexual, racial, religious or political grounds, from seeking to migrate.

Conclusions

Expansion of library and information services worldwide and applications of new technology have been such that local education programmes have not been able to cope with demands for professional personnel. It seems that study abroad will still be needed to provide basic and advanced level education and updating for some time to come. This would apply particularly in the information science area.

There appears to be better coordination of study abroad within library and information services planning on a national level. One factor which may disrupt personnel planning for developing countries is that many students studying abroad are self-funded, and not part of any plan.

Vital to successful outcomes for study abroad is the calibre of the person selected to study abroad. If we take short-term outcomes of successful completion of the study programme, then facility in the appropriate language and academic qualifications are necessary. This may bar people with appropriate experience, and ones who would make a contribution on return home.

Also necessary for success is the placement of the foreign student in an appropriate study or training programme. Chance alone may determine placement. If planning for the preparation of library and information science personnel takes place as part of national planning for library

and information services, then newly returned students should be placed in appropriate positions to utilize their new skills. Also necessary to stem the brain drain is that women should not be discriminated against in the allocation of positions or in salaries. Better working conditions, including good pay and status, would encourage all returnees to stay in their home country. Of importance in an ongoing process of change is the need for continuing education and updating.

We can conclude that study abroad must be part of a long-term and well integrated planning process. Adverse conditions have been conquered in the past, there are many examples of students who have studied abroad and returned to have a major impact at home. We can learn from the past to make study abroad a successful contributor to the development of library and information services for the 21st century.

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Library Statistics and Institutional Decision-making

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LIBRARY STATISTICS AND INSTITUTIONAL DECISION-MAKING

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1. The definition, collection and collation of library statistics is an extraordinarily difficult task. The task is so difficult that it can almost be seen by compilers as an end in itself. This is not so. Library statistics are a means to an end. The ends are either to corroborate the decisions of an institution, or to change them. Statistics accurately gathered can monitor and confirm the management decisions made by an institution in all activities, from resource allocation to service results. Statistics may even cause an institution to modify its stated goals. Statistics accurately gathered can cause an institution to change its prior operational decisions. The statistics should be neutral. That is, it would not be known in advance what effect the data will have on institutional decisions.

2. There are two major sources of statistical data. One source is specially collected data for a specific purpose. The data can be collected regularly, or by the use of a specific survey. On occasion, both methods are combined. Specially collected data require unique definitions related to the purpose of the data collection. The second source is data derived automatically as a by-product of an established operation. With the increased use of computers in libraries and information centers such data are increasingly available. The data are not specifically defined for the survey. The data definitions are resident in the system from which the

data are derived. The increasing national and international acceptance of computer data standards, for example the MARC Formats, is offering great homogeneity and standardization of data.

There tends to be greater accuracy in derived data. That is so because they have passed the rigorous definitional and processing requirements of a computer. This statement does assume a quality control effort as data are created and entered into a system. The formal structural elements are correct in finished data. One trusts a cataloger who states that a book in French is not in Japanese.

Derived data are more accessible, consistent, and cheaper to process than collected data. Requirements for accuracy, or levels of tolerance, for the data are defined by the task for which they are being used. Because of the growing ubiquitous nature of computer data standards, one suggests that manual collection systems adopt those data definitions now. This would lead to data consistencies now and in the future.

Whether or not the data are collected or derived, a difficult task is the selection of data elements which are appropriate for a purpose. Data are deemed appropriate when they can corroborate or change an institutional decision, and are themselves neutral.

3. The availability of raw data as a by-product has led to the development of software to analyze the data. Such systems are sometimes called management information systems, or decision support systems. They analyze data, allow them to be matched and juxtaposed, and allow for projections

of results from a variety of proposed decisions. They are not fundamentally different from the feedback or quality control procedures used in industrial engineering computing and robotics. There are, though, three qualitative differences. One, the incoming management data to be processed are less precise. Two, the feedback response to engineering data is more prompt; almost immediate in fact. Three, the engineering data results are believed, if only by the robot. Where industrial data both corroborate and change decisions, that is not always the case with management data. It is seldom the case with library statistical data.

4. Decision-making is a very complex task which has many components. The components range from the intangible to the tangible. Instinct, experience, tradition, and longing or ambition are intangible components. Management data are tangible components. The components do not carry equal weight in the decision process. The intangibles of human judgement carry more weight. Quite often, management data have almost to be cataclysmic before, for example, a theatre is closed or a company declares bankruptcy. Early acceptance of management data in the decision process can change decisions when they need to be changed.

If one accepts this premise, then one seeks to understand why it is so. A number of reasons suggest themselves. The data are unfamiliar. The data are disbelieved, both in their collated form and through projection. The data are a challenge to internal and external power sources. The integrity and neutrality of the data are threatening. The intuitive skills of the decision maker are threatened by data.

Both tangible and intangible elements are essential in good decision-making. There are countless examples of good decisions made despite compelling data which indicate alternative choices; and bad decisions which have ignored data. In human rather than machine systems, the final responsibility for the decision belongs to a human. It is noted that computer software developers call their programs decision support systems not decision making systems. It is axiomatic that the better the data, the more informed the decision, and the better the decision. Accurate data are essential.

5. There are significant examples of social systems in which data automatically stimulate responses without human decision making intervening in a significant routine manner. (In such cases human intervention is dedicated to changing the system - or the rules of the game.) One example of such a system is the United States Federal Programs to assist workers and communities in economic distress in which the management data of unemployment statistics collected in a monthly survey by the Federal Bureau of Labor Statistics automatically increase or decrease the allocation of funds. The same is true with U.S. Farm Price subsidies responding to agricultural production and demand. A library example is the U.S. New York State distribution of library support funds to local districts based on the population census.

These citations are examples of human systems in which management data have been integrated into, and are an important component of, the system. A human decision incorporated the data. The humans who made those decisions had cognizance of the availability of the data, and confidence in those

data. The systems became dependent on the data, not independent of them. Rarely does one find library statistics accorded such significance.

6. A quandary which the library administrator, or network manager, faces is that it is very rare for a library to be a complete, independent, organization. Most libraries are parts of other entities, such as colleges, schools, city government or a corporation. The chief librarian needs data for two purposes. One purpose is efficient internal administration of the library. The other purpose is competition for funds and support within the organization. Some data may contribute to both tasks. An example is fiscal data, where budgets and inflation costs are understood by all parties. All managers recognize a 10% inflation figure when they see it. It is yet difficult for a library to express its intangible product, which is service, in tangible terms. This is particularly true when the data compete with, say, sales figures, or degrees awarded by a college. Either the data are so trivial as to be meaningless (for example, number of photocopies made), or so esoteric as to be confusing to decision-making colleagues. Whatever the cause, the result is likely to be rejection of the library's claim.

The less familiar the data, the higher the probability of managerial rejection. Managers need to have the opportunity to absorb the data into their decision-making process; almost to accept the data as an equal with instinct or experience. Making this happen is not a trivial task. For one thing the data will be challenged by competitors for resources. Far more important, in order to achieve the familiarity of acceptance the data must be useful, accurate and consistent.

When new data are developed, particularly as the product of an existing system, their very definition should be agreed upon with the manager prior to their production. The mode of the data's introduction to the decision process is primarily a political issue, not a management task. One writer, Peter Keen, has even suggested that the introduction of new data will generate a counter-implementation plan by opponents, in turn to be met with a counter-counter implementation plan(1). Strengthened library service at institutional, local or national level may require such stratagems. The easier the data are absorbed by decision-makers, the easier the attraction of support for the library service, for strong library service is a good contribution to its own community.

The data themselves have certain qualities. Accuracy, timeliness, and neutrality have been noted. They may also have the power to comfort or to shock. They may have a novelty value which allows them to be cited without either understanding or absorption. This is the worst fate since then the data divert and mislead the decision-makers.

7. Here is an example of the political problems met when installing a library management information system. State University of New York developed a system of library collection analysis which measures the degree of uniqueness of collections by co-occurrence of the same title among libraries(2). It also measures the numeric strength of each library collection by academic discipline. The system is based on computer analysis of library catalog and holdings records derived from the OCLC system. The data are also correlated with academic effort recorded by student credit hours taught, number of students, or degrees awarded.

One result was the data demonstrated an extraordinarily high degree of uniqueness among the ten 4-year college collections within SUNY. An average of 55% of each collection is unique to that library. Among 10 libraries only 0.2% of the titles were held by every library. Other data were equally revealing and startling. Subsequent studies have confirmed the first findings.

One would hope that the data would have been absorbed into the general institutional decision processes of the University. Not so. The data suffered the fate of being a quotable novelty. They were, and are, challenging politically, intellectually, and managerially. Busy decision-makers had not been, or had declined to be, briefed during the system development process. This is as true of libraries on the campuses, and campus administrators, as of central University administrators and colleague state agencies. After six years of availability, the data are not absorbed. The necessary political ground work was not done. The task continues.

8. There are some lessons which can be learned. If there is agreement that library service data are a valuable component of institutional decision making, some criteria must be met. Two strategies must be performed simultaneously. The first concerns the data themselves. The quality of data is imperative. They must be useful, accurate, consistent, timely, neutral, understandable, and absorbable by others. The decisions to implement this strategy are largely mechanical. They are what developers of statistical systems normally do.

The second strategy concerns the value of the result. Fascinating though the data may be in themselves, they are only the means to an end. That end is improvement in library and information services, for the benefit of their communities. That goal is as true of local libraries as of major national and international library systems. Library data will affect both library internal cost efficiency decisions, and claims for external support. Library statistical data have to be at least an integral part of the intuitive decision processes of institutional directors. Ideally, they would be integrated into established automatic processes which generate support routinely, as in the U.S. Labor Statistics. One needs the confidence that the library data are sufficiently compelling to describe conditions which will generate further support.

Above all, the second strategy may not be ignored. Absorption of the data must be an integral and simultaneous part of the system development. It is the more difficult strategy. All effort is wasted if the strategy is not successfully done. Failure to do so will waste the effort of obtaining quality data. The goal of improved library service is not served by failed, incomplete, library statistics and flawed institutional decision making.

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